

Introduction to the Minitrack on Engineering Complex Computer Systems

Alberto Broggi

Dipartimento di Ingegneria dell'Informazione
Università di Parma
I-43100 Parma, Italy
broggi@CE.UniPR.IT

Alexander D. Stoyenko

Real-Time Computing Laboratory, CIS
New Jersey Institute of Technology
Newark, New Jersey 07102 USA
alex@vulcan.njit.edu

Dear Reader,

welcome to the HICSS'97 Minitrack on Engineering of Complex Computer Systems (ECCS)!

Complex computer systems are common in many sectors, such as manufacturing, communications, defense, transportation, aerospace, hazardous environments, energy, and health care. These systems are frequently distributed over heterogeneous networks, and are driven by many diverse requirements on performance, real-time behavior, fault tolerance, security, adaptability, development time and cost, long life concerns, and other areas. Such requirements frequently conflict, and their satisfaction therefore requires managing the trade-off among them during system development and throughout the entire system life.

This minitrack brings together a seemingly diverse set of 26 papers which deal with complexity in different ways, in different parts and components of computer systems, and during different stages of system lifecycle. These papers have survived a barrage of most rigorous and tough reviews, generated by over 100 reviewers. We are delighted to have witnessed such significant interest and are sure that the minitrack will be long remembered, positively, by all participants. We hope you too enjoy reading these papers, in the proceedings.

The engineering of complex computer systems is fast growing as an area of contemporary interest. This minitrack joins the popular annual International Conference on Engineering of Complex Computer Systems (the flagship conference of the IEEE Technical Committee on Complexity in Computing, now in its third year) and the new annual IEEE International Conference on Formal Engineering Methods (also sponsored by the same TC), in providing fora to the diverse and exciting community of industrial, academic and government folks working in the area. We hope you participate in these meetings and contribute your own view to what is undoubtedly one of the most challenging and rewarding tasks in the CS/CE community today.

Structure of the Minitrack

The twenty-six papers accepted for this Minitrack have been divided into eight 90 min. sessions in order to provide each author with a sufficiently long time slot for a detailed presentation and to allow a strong interaction with the audience. The eight sessions address some of the major topics of ECCS, such as software engineering, communication, and design of application-oriented systems.

The large number of submissions to the ECCS Minitrack and the high quality of the accepted papers allowed to select two candidates for the nominations of the best paper within the Advanced Technology Track.

Acknowledgements

The Minitrack coordinators would like to thank the large number of reviewers who provided constructive comments on the content and presentation of the papers. We also recognize the authors, whose work is the substance of this minitrack.

Moreover, we are indebted to the General Chairman Ralph Sprague and Eileen Dennis for the opportunity he gave us to bring the ECCS topic to HICSS and for all professional support that we received in the organization of this event. Finally we want to acknowledge the financial support we received from the Dipartimento di Ingegneria dell'Informazione, University of Parma, Italy, for the administration of the Minitrack.

Now, let us proceed with the Minitrack....
With best regards, Alberto and Alex.